Amendments to the Specification:

Please replace the paragraph beginning on page 13, line 4 with the following:

Referring again to FIG. 3, in the case of DES, 64 bit data blocks are passed from the cryptography in FIFO 356 to the cryptography engine 358 for processing as soon as they are received in properly aligned form. The encrypted result is passed from the cryptography engine to a cryptography out FIFO 360 for output [[form]] from the cryptography component of the chip architecture 300.

Please replace the paragraph beginning on page 12, line 17 with the following:

FIG. 6 is a high-level block diagram of a system implementing a cryptography accelerator chip architecture in accordance with one embodiment of the present invention. The system implements the alignment logic of the present invention, described above. The hardware for the cryptography processing is implemented as a stand-alone cryptography accelerator chip 602 and incorporated into a standard processing system 600. The cryptography accelerator chip 602 includes encryption 605 and authentication 606 components, and resides on an expansion card [[603]] 604 connected to a standard PCI bus 608 via a standard on-chip PCI interface. The chip also includes a pad engine 607

for calculating the pad length and providing the Pad Length calculation and appropriate number of Pad bits to the cryptography alignment block to enable efficient alignment and processing of cryptography data, as described above. The processing system 600 includes a processing unit 610 and a system memory unit 612. The processing unit 610 and the system memory unit 612 may be attached to the system bus 608 via a bridge and memory controller 614. A LAN interface 616 attaches the processing system 600 to a local area network and receives packets for processing and writes out processed packets to the network. Likewise, a WAN interface 618 connects the processing system to a WAN, such as the Internet, and manages in-bound and out-bound packets, providing automatic security processing for packets.